

WHAT IS CLAIMED IS:

- 1                   1.     An isolated polynucleotide encoding a protein less than about 300  
2 amino acids comprising a sequence selected from the group consisting of:
  - 3                   (a)     sequence provided in SEQ ID NO:3;
  - 4                   (b)     complements of the sequence provided in SEQ ID NO:3;
  - 5                   (c)     sequences having at least 90% identity to a sequence of SEQ ID NO:  
6                             3; and
  - 7                   (d)     degenerate variants of a sequence provided in SEQ ID NO:3.
- 1                   2.     An isolated polypeptide comprising an amino acid sequence selected  
2 from the group consisting of:
  - 3                   (a)     sequences encoded by a polynucleotide of claim 1; and
  - 4                   (b)     sequences having at least 90% identity to a sequence encoded by a  
5                             polynucleotide of claim 1; and
  - 6                   (c)     sequences provided in SEQ ID NOs:16-20; and
  - 7                   (d)     sequences provided in SEQ ID NOs:21-840; and
  - 8                   (e)     sequences provided in SEQ ID NOs:841-861.
- 1                   3.     An expression vector comprising a polynucleotide of claim 1 operably  
2 linked to an expression control sequence.
- 1                   4.     A host cell transformed or transfected with an expression vector  
2 according to claim 3.
- 1                   5.     An isolated antibody, or antigen-binding fragment thereof, that  
2 specifically binds to a polypeptide of claim 2.
- 1                   6.     A method for detecting the presence of a cancer in a patient,  
2 comprising the steps of:
  - 3                   (a)     obtaining a biological sample from the patient;
  - 4                   (b)     contacting the biological sample with a binding agent that binds to a  
5                             polypeptide of claim 2;
  - 6                   (c)     detecting in the sample an amount of polypeptide that binds to the  
7                             binding agent; and

8 (d) comparing the amount of polypeptide to a predetermined cut-off value  
9 and therefrom determining the presence of a cancer in the patient.

1 7. A fusion protein comprising at least one polypeptide according to  
2 claim 2.

1 8. An oligonucleotide that hybridizes to nucleotides 1-630 of the  
2 sequence recited in SEQ ID NO:3 under moderately stringent conditions.

1 9. A method for stimulating and/or expanding T cells specific for a tumor  
2 protein, comprising contacting T cells with at least one component selected from the group  
3 consisting of:

- 4 (a) polypeptides according to claim 2;
- 5 (b) polynucleotides according to claim 1; and
- 6 (c) antigen-presenting cells that express a polypeptide according to claim  
7 1,  
8 under conditions and for a time sufficient to permit the stimulation and/or expansion of T  
9 cells.

1 10. An isolated T cell population, comprising T cells prepared according to  
2 the method of claim 9.

1 11. A composition comprising a first component selected from the group  
2 consisting of physiologically acceptable carriers and immunostimulants, and a second  
3 component selected from the group consisting of:

- 4 (a) polypeptides according to claim 2;
- 5 (b) polynucleotides according to claim 1;
- 6 (c) antibodies according to claim 5;
- 7 (d) fusion proteins according to claim 7;
- 8 (e) T cell populations according to claim 10; and  
9 antigen presenting cells that express a polypeptide according to claim 2.

1 12. A method for stimulating an immune response in a patient, comprising  
2 administering to the patient a composition of claim 11.

1 13. A method for the treatment of a cancer in a patient, comprising  
2 administering to the patient a composition of claim 11.

1 14. A method for determining the presence of a cancer in a patient,  
2 comprising the steps of:

- 3 (a) obtaining a biological sample from the patient;  
4 (b) contacting the biological sample with an oligonucleotide according to  
5 claim 8;  
6 (c) detecting in the sample an amount of a polynucleotide that hybridizes  
7 to the oligonucleotide; and  
8 (d) comparing the amount of polynucleotide that hybridizes to the  
9 oligonucleotide to a predetermined cut-off value, and therefrom  
10 determining the presence of the cancer in the patient.

1 15. A diagnostic kit comprising at least one oligonucleotide according to  
2 claim 8.

1 16. A diagnostic kit comprising at least one antibody according to claim 5  
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 17. A method for inhibiting the development of a cancer in a patient,  
2 comprising the steps of:

- 3 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at  
4 least one component selected from the group consisting of: (i)  
5 polypeptides according to claim 2; (ii) polynucleotides according to  
6 claim 1; and (iii) antigen presenting cells that express a polypeptide of  
7 claim 2, such that T cell proliferate;  
8 (b) administering to the patient an effective amount of the proliferated T  
9 cells,

10 and thereby inhibiting the development of a cancer in the patient.

1 18. An isolated polynucleotide encoding a protein of less than 300 amino  
2 acids comprising a sequence selected from the group consisting of:

- 3 (a) sequence provided in SEQ ID NO:6;  
4 (b) complements of the sequences provided in SEQ ID NO:6;

- (c) sequences having at least 90% identity to a sequence of SEQ ID NO: 6; and
- (d) degenerate variants of a sequence provided in SEQ ID NO:6.

19. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

- (a) sequences encoded by a polynucleotide of claim 18; and
- (b) sequences having at least 90% identity to a sequence encoded by a polynucleotide of claim 18; and
- (c) the sequence provided in SEQ ID NO:869.

20. An expression vector comprising a polynucleotide of claim 18 operably linked to an expression control sequence.

21. A host cell transformed or transfected with an expression vector according to claim 20.

22. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a polypeptide of claim 19.

23. A method for detecting the presence of a cancer in a patient, comprising the steps of:

- (a) obtaining a biological sample from the patient;
- (b) contacting the biological sample with a binding agent that binds to a polypeptide of claim 19;
- (c) detecting in the sample an amount of polypeptide that binds to the binding agent; and
- (d) comparing the amount of polypeptide to a predetermined cut-off value and therefrom determining the presence of a cancer in the patient.

24. A fusion protein comprising at least one polypeptide according to claim 19.

25. A method for stimulating and/or expanding T cells specific for a tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

- 4 (a) polypeptides according to claim 19;  
5 (b) polynucleotides according to claim 18; and  
6 (c) antigen-presenting cells that express a polypeptide encoded by a  
7 polynucleotide according to claim 18,  
8 under conditions and for a time sufficient to permit the stimulation and/or expansion of T  
9 cells.

1 26. An isolated T cell population, comprising T cells prepared according to  
2 the method of claim 26.

1 27. A composition comprising a first component selected from the group  
2 consisting of physiologically acceptable carriers and immunostimulants, and a second  
3 component selected from the group consisting of:

- 4 (a) polypeptides according to claim 19;  
5 (b) polynucleotides according to claim 18;  
6 (c) antibodies according to claim 22;  
7 (d) fusion proteins according to claim 24;  
8 (e) T cell populations according to claim 27; and  
9 antigen presenting cells that express a polypeptide according to claim 19.

1 28. A method for stimulating an immune response in a patient, comprising  
2 administering to the patient a composition of claim 28.

1 29. A method for the treatment of a cancer in a patient, comprising  
2 administering to the patient a composition of claim 28.

1 30. A diagnostic kit comprising at least one oligonucleotide according to  
2 claim 25.

1 31. A diagnostic kit comprising at least one antibody according to claim 22  
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 32. A method for inhibiting the development of a cancer in a patient,  
2 comprising the steps of:

- 3 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at  
4 least one component selected from the group consisting of: (i)

5 polypeptides according to claim 19; (ii) polynucleotides according to  
6 claim 18; and (iii) antigen presenting cells that express a polypeptide  
7 of claim 19, such that T cell proliferate;  
8 (b) administering to the patient an effective amount of the proliferated T  
9 cells,  
10 and thereby inhibiting the development of a cancer in the patient.